WE CLAIM AS OUR INVENTION:

1. A method for detecting pressure in an x-ray tube having a cathode heated with a heater current and wherein electrons are accelerated between the cathode and an anode by an applied x-ray tube voltage, comprising the steps of:

measuring said heater current;

measuring a tube current corresponding to said applied x-ray tube voltage;

determining a quantity selected from the group consisting of a difference between said heater current and said tube current, a temporal change of said heater current, and a temporal change of said tube current;

comparing said quantity with a predetermined calibration values to obtain a comparison result; and

from said comparison result, generating a value representing pressure in said x-ray tube.

2. A method as claimed in claim 1 comprising, from said value representing pressure in the x-ray tube, determining a value indicating a voltage stability of said x-ray tube.

3. A method as claimed in claim 1 comprising, from said value representing pressure in the x-ray tube, determining a value indicating a remaining life span of said x-ray tube.

4. A method as claimed in claim 1 comprising maintaining said tube current constant within a predetermined margin of deviation, and using said temporal change of said heater current as said quantity.

5. A method as claimed in claim 1 comprising maintaining said heater current constant within a predetermined margin of deviation, and using said temporal change of said tube current as said quantity.

6. A method as claimed in claim 1 comprising:

providing a device in said x-ray tube for removing foreign ions;

determining said quantity at least twice at respective points in time, respectively, and thereby obtaining at least two determined quantities; and

comparing said at least two determined quantities with each other to obtain a further comparison result and assessing, dependent on said further comparison result, functioning of said device for removing foreign ions.

7. A method for detecting pressure in an x-ray tube having a cathode heated with a heater current produced by a heater voltage and wherein electrons are accelerated between the cathode and an anode by an applied x-ray tube voltage, comprising the steps of:

measuring said heater voltage;

measuring said applied x-ray tube voltage;

determining a quantity selected from the group consisting of a difference between said heater voltage and said x-ray tube voltage, a temporal change of said heater voltage, and a temporal change of said x-ray tube voltage;

comparing said quantity with a predetermined calibration values to obtain a comparison result; and

from said comparison result, generating a value representing pressure in said x-ray tube.

8. A method for detecting pressure in an x-ray tube having a cathode heated with a heater current and wherein electrons are accelerated between the cathode and an anode by an applied x-ray tube voltage, comprising the steps of:

measuring said heater current;

measuring a tube current corresponding to said applied x-ray tube voltage;

determining a quantity selected from the group consisting of a difference between said heater current and said tube current, a temporal change of said heater current, and a temporal change of said tube current;

comparing said quantity with a predetermined calibration values to obtain a comparison result; and

using said comparison result as a representation of pressure in said x-ray tube.